

Category #35:

The Guidelines should include other testing standards as a way to certify vacuum cleaners.

State Response:

Regarding testing standards for vacuum cleaners, OGS is unable to identify the specific testing process and methods used by GreenGuard to evaluate the particulate emission rates, efficacy of dust removal from a carpet, mite allergen removal, mold spore removal and carpet appearance/damage. In addition, the GreenGuard Product Guide does not clearly list any approved vacuum cleaners.

ref: <http://www.greenguard.org/DesktopDefault.aspx?tabid=12>

The comments clearly identify a lack of agreement within the carpet manufacturer and vacuum cleaner industries regarding how to evaluate the performance of vacuum cleaners and what level of performance should be expected from equipment that could be considered “environmentally sensitive,” as required by the NYS legislation. Several of the comments criticize the testing methods used by CRI, mostly on the grounds that they are not consistent with methods developed by Committee F11 of ASTM. Total particulate emissions of vacuum cleaners, particularly of respirable particles, is an important criterion of performance for the health of building occupants. The standards developed by the ASTM F11 Committee do not address particulate emissions by the entire vacuum cleaner. No active or proposed standard test method is listed for the F11 Subcommittee that appears to be charged with developing such test methods (Subcommittee 11.23.08 – Total Emissions). The CRI Green Label Program appears to be the only vacuum cleaner certification program that considers cleaning effectiveness of vacuum cleaners and indoor air quality. A substantial variety of vacuum cleaners have been certified under this program. Thus, the Guidelines will continue to include the listing of vacuum cleaners certified to the Carpet and Rug Institute (CRI) Green Label standard.

ref. (<http://www.astm.org/cgi-bin/SoftCart.exe/COMMIT/SUBCOMMIT/F112308.htm?L+mystore+tyoa4318+1151343522>)

Frequently Asked Public Comment:**HEPA Filtration and HEPA Vacuums: (A) CRI Green Label Program (Pro/Con).**

- (A) Section V – Designation of Approved Products – subsection 5 (Vacuum Cleaner Requirements) should incorporate the option to be CRI certified or Greenguard Certified. Greenguard certified products should carry the same documentation requirement. To qualify for Greenguard Certification, the cleaning systems must go through a stringent testing process that ensures low emissions of chemicals and particles into the air, but also ensure that the system is efficient in the removal of dust and microbiological allergens, a significant cause of asthma and respiratory disease among school children. The Greenguard standard for floor cleaning systems include the following requirements:

GREENGUARD Allowable Emission Levels Floor Cleaning

All products and processes are tested in dynamic environmental chambers following ASTM standards D-5116-97 and D-6670-01, and the U.S. Environmental Protection Agency's testing protocol guidelines. Cleaning systems are defined to include equipment, chemicals, materials and their recommended application rates and procedures. Extraction efficiencies measure effectiveness of contaminant removal and air concentrations are defined to reach acceptable airborne levels within 12 hours of process application for schools and commercial buildings. Air concentrations are based on standard room volume and building air change rate as defined by the certification program. Maximum allowable emission levels are those required by the state of Washington's procurement specifications, the recommendations from the World Health Organization, Germany's Blue Angel Program, and LEED clearance levels. When multiple emission values are recommended, the lesser or more stringent is used as the acceptable

emission value for GREENGUARD certification.

Cleaning Systems:

Total VOCs < 0.50 mg/m³

Formaldehyde < 0.05 ppm

Total aldehydes < 0.1 ppm

Respirable particles (less than 10 um) < 0.05 mg/m³

Mite allergen removal (hard surface or carpet) > 95% removed

Mold spores removal (hard surface or carpet) > 95% removed

Dust removal (hard surface or carpet) >95% removed

Listing of measured carcinogens and reproductive toxins as identified by California Proposition 65, in the U.S. National Toxicology Program (NTP), and the International agency on Research on Cancer (IARC) must be provided.

Any pollutant not listed must product an air concentration level no greater than 1/10 the Threshold Limit Value (TLV) industrial work place standard (Reference: American Conference of Government Industrial Hygienists, 6500 Glenway, Building D-7, Cincinnati Ohio 45211-4438).

Any pollutant regulated as a primary or secondary outdoor air pollutant must meet a concentration that will not generate an air concentration greater than that promulgated by the National Ambient Air Quality Standard (U.S. EPA, code of Federal Regulations, Title 40, Part 50).

(B) Section VI – Cleaning Product Categories and Definitions – subsection E (Vacuum Cleaners) should include information on the Greenguard Certification Program for Cleaning Systems. (Ben Taube, Public Affairs Manager, Greenguard Environmental Institute)

Replacement Response May 17, 2006 of Retracted Letter Dated May 3, 2006

This letter is being written to replace an earlier letter of comment I had sent on this issue on May 3.

Would like to take advantage of the extended comment period provided by the NY State OGS, and retract my earlier letter of comment, replacing it with this more focused letter.

Section V of the draft document is proposing the use of the Carpet and Rug Institute Green Label approval program for vacuum cleaners. There has also been discussion about referencing other upcoming CRI Seal of Approval programs for cleaning equipment other than vacuum cleaners.

Windsor Industries is a member of the Carpet and Rug Institute, and has long supported the CRI approval programs. We are continually working with CRI to develop and improve the programs, participating in CRI work groups, and working along side CRI personnel on various ASTM F11 groups writing performance related standards.

Windsor would like to give its support for referencing the CRI approval programs and taking advantage of the fine work already accomplished by CRI and its member companies.

(Kenneth J. Wills, Engineering Test Manager, Windsor Industries)

Original Response Dated May 3, 2006 (Retracted and Replaced by May 17, 2006 Letter.) Section V of the draft document is proposing the use of the Carpet and Rug Institute Green Label approval program for vacuum cleaners. Based on his experience with this approval program, he does not believe the program should be cited in the New York State document. There has also been discussion about referencing other upcoming CRI programs for cleaning equipment other than vacuum cleaners.

Has been involved with various industry groups working with the Carpet and Rug Institute, which has developed this vacuum cleaner approval program, and which is developing similar approval programs for other cleaning equipment. Is familiar with the programs, how they were developed, how they are implemented, and how they are accepted by the cleaning equipment industry.

While the objectives of the NY State document are good, there is concern about referencing the CRI programs. The technical points that are the basis for this concern are listed in summarized form here.

The CRI tests are not consensus based, (i.e. ANSI) and are not widely accepted in the industry.

The CRI approval tests can only be performed by one lab, as dictated by CRI.

One lab can become swamped and can become slow responding to requests for testing.

The CRI program does not have acceptable practices in place for administering the approval programs.

Issues such as obsolescence, design changes, similar products, private labeling, and sample selection are not adequately addressed.

The current CRI test procedures and practices have not been proven to be applicable for evaluating all commercial cleaning equipment, mainly due to the size of some commercial equipment.

The document, and the CRI criteria, does not specify the use of commercial equipment in these school applications, which is an important criterion. There are many products approved by CRI which are not commercial and which are not suitable for use in these applications.

The document, and the CRI criteria, does not specify the use of equipment tested to safety standards in these school applications, which is an important criterion. There may be products approved by CRI which are not tested to any safety standards and which are not suitable for use in this application.

The CRI program was developed around the desire of the carpet industry to provide carpet users with a suitable answer when they ask what vacuum cleaner should be used on their new carpet.

The objective was to recommend vacuum cleaners that did not damage the carpet, but still provided an acceptable level of soil removal. The objective was not to recommend vacuum cleaners that were environmentally sensitive.

A possible alternative to referencing the CRI program would be to define what vacuum cleaner parameters, or extractor parameters, are considered important to the New York schools, and set practical performance criteria for these parameters. Manufacturers could then test their equipment at any respected laboratory, to accepted industry test methods.

One of the underlining issues is the difficulty in measuring the performance of extraction type cleaning equipment. I, along with people from CRI, participate in ASTM working groups that are attempting to define acceptable test methods. This has proven to be elusive. Currently, CRI is moving forward with a performance measurement based on X-Ray Fluorescence for extractor type cleaning equipment, and possibly vacuum cleaners. There is only one laboratory capable of performing this measurement. This raises issues with laboratory availability, results verification, procedure verification, pm-testing, and cost.

Based on the concerns noted above, I recommend that the draft document NOT reference the CRI Green Label approval program as the requirement for vacuum cleaners. In addition, I recommend that the CRI programs for extractor cleaning performance NOT be considered for any similar reference. (Kenneth J. Wills, Engineering Test Manager, Windsor Industries)

This letter is Shaw Industries' rebuttal position to a letter from Windsor Industries dated May 3, 2006 (38c2.) regarding the language contained in Section V, paragraph 5, Vacuum Cleaner Requirements. Shaw Industries is a subsidiary of Berkshire Hathaway, Inc. and is the world's largest carpet manufacturer. We have been active in research into carpet maintenance for many years. We were involved from the beginning in the Carpet and Rug Institute's Testing and Labeling Program (often called the Green Label program) for Vacuum Cleaners, as well as the other four Green Label programs. We are keenly interested in consumer satisfaction with our products as well as public health.

We were surprised at the Windsor letter given their strong support for the CRI program over the past decade. As chair of the CRI Cleaning and Maintenance Committee, which is responsible for the program, I am the first to admit that the program is not perfect, however, it is the only comprehensive program available. All the CRI Green Label programs are dynamic and are often updated and enhanced as needed.

The points enumerated in the Windsor letter are addressed individually below.

1. The CRI program tests are not consensus-based, (i.e., ANSI) and are not widely accepted in the industry.

From the beginning, outside input was sought. The program concept, test methods and proposed standards were reviewed by an independent group of scientists and public health professionals, from the US EPA, Cornell University, the University of North Carolina and Emory University. The vacuum cleaner industry participated in the development of the program from the beginning and most manufacturers have been highly supportive.

2. The CRI approval tests can only be performed by one lab, as dictated by CRI.

The 3 test methods used in the program are in the public domain and can be and are currently being performed by other private labs, including several vacuum cleaners manufacturers' labs. One lab, Professional Testing Laboratories of Dalton GA, is currently the only lab approved for certification. That company was indeed given a 3 year exclusive for the testing business in recognition of the enormous amount of time, money and effort expended in the development of the test methods; this is only fair. The CRI Board of Directors has dictated that all programs be open for more than one lab. To date, no other independent lab has expressed interest in this program. Vacuum manufacturers have requested to be allowed to conduct their own testing for certification purposes; however, the program's credibility rests on third-party testing and this foundation of credibility cannot be compromised.

3. One lab can become swamped and can become slow in responding to requests for testing.

This is entirely possible. I asked Professional Testing to provide input on this point and found that testing typically is accomplished within 3 weeks — remarkable in the world of testing. Obviously, shipping and administrative time add to this. As stated in point #2, the program is open to other independent labs.

4. The CRI program does not have acceptable practices in place for administering the approval programs. Issues such as obsolescence, design changes, similar products, private labeling and sample selection are not adequately addressed.

Last year a provision was added to require annual renewal of listed products in order to insure that only current models are listed — this does not preclude a manufacturer who so desires to keep an obsolete model on the list for a small fee. The program participation agreement requires manufacturers to notify CRI of design changes that would affect performance. The program allows for similar products whose design differences do not affect performance to be tested as a single product. The program allows for private label products to be listed, and hundreds are currently listed. This allegation is preposterous.

5. The current CRI test procedures and practices have not been proven to be applicable for evaluating all commercial cleaning equipment, mainly due to the size of some commercial equipment.

To date, all requests for testing have been honored. In fact, when I called the lab today, the doors of the environmental chamber had been removed to accommodate an 850 pound riding-type commercial vacuum -- coincidentally, it was manufactured by Windsor Industries!

6. The document, and the CRI criteria, does not specify the use of commercial in the school applications. , which is an important criterion. There are many products approved by CRI which are not commercial and which are not suitable for use in these applications.

I fully agree with the first statement, the document must specify commercial machines. I must disagree with the second statement. The CRI program does indeed have a designation for "commercial" machines. The category is called "low pile" since it has not been possible to gain consensus among vacuum manufacturer participants on a better definition of "commercial".

7. The document, and the CRI criteria, does not specify the use of equipment tested to safety standards in these school applications, which is an important criterion. There may be products approved by CRI which are not tested to any safety standards and which are not suitable for this application.

I agree. The CRI program was not intended to assess safety. This attribute has traditionally been

adequately addressed by Underwriters Laboratories. Any additional safety testing would be superfluous and an additional expense — the marketplace would demand UL acceptance regardless.

8. The CRI program was developed around the desire of the carpet industry to provide carpet users with suitable answer when they ask (sic) what vacuum cleaner should be used on their new carpet. The objective was to recommend vacuum cleaners that did not damage the carpet, but still provided an acceptable level of soil removal. The objective was not to recommend vacuum cleaners that were environmentally sensitive.

This is absolute nonsense. The initial and primary objective of the program from the very beginning was to identify and recognize vacuums that contained dust. Dust emission testing at that time was grossly inadequate and machines commonly showed particle loadings in the breathing exceeding 6,000 micrograms per cubic meter — this was highly detrimental to public health. Only last week, an air sample in a building at the University of North Carolina showed 2000 ug/m³, while a non-certified vacuum was being used. When a Green Label vacuum was used in the same area, the reading dropped to near background level. The CRI standard is 100 ug/m³. We have had discussions about reducing the standard by half, and most vacuums today could easily meet that standard — all because of engineering changes brought about by this very program! This represents a huge improvement in indoor air quality.

Clearly, dust containment could be easily achieved if no soil were removed from the carpet, and a soil removal test was necessary. It was also clear that very high soil removal rates could be achieved by very aggressive brush systems that could also destroy the carpet (less important on commercial carpet). The program and test development went in this sequence, not the sequence stated by Windsor.

Mr. Will's letter digresses from vacuums to extraction cleaning equipment. CRI has indeed developed testing and certification programs for extraction cleaning machines, and last week announced a program for extraction systems. Measurement of soil removal from carpet in terms of precision, accuracy and reproducibility is extremely difficult. X-ray fluorescence spectroscopy (XRF) has solved most of these issues. It has been shown to correlate well with measurements by gravimetric means, light reflectance, and visual assessment. Due to the use of technology developed by the National Aeronautics and Space Administration (NASA), both the test and program have been recognized by NASA and been awarded the Space Foundation Seal — these are not given lightly.

It is true that only one lab does the testing for certification at this time. Professional Testing Laboratories believed that that XRF might be useful for this purpose and made a significant capital and intellectual investment to develop a test protocol. XRF equipment is readily available from at least 2 sources. Anyone can purchase the equipment and then either license the software developed by Professional or develop their own. Shaw Industries recently purchased a major piece of XRF equipment. The test method is in the public domain. Again, CRI has granted Professional a 3 year exclusive for the testing business in recognition of their entrepreneurship, ingenuity and efforts. After that, it is CRI's desire that other independent labs be certified for the work.

I have endeavored to present the other side of the story presented by Mr. Wills. I do not understand a position that denigrates a viable, credible program that is strongly supported by the US EPA and the American Lung Association as being beneficial to public health. This is especially concerning given that no recommendation for any independent alternative was presented.

It is appropriate to quote that I believe characterizes the CRI effort very well. It came from Dr. Michael Berry, who formerly managed EPA's Indoor Air Quality research program: "...one of the most pro-active improvements in indoor air quality and public health..." (Carey R. Mitchell, Director, Technical Services, Shaw Industries Group, Inc.)

--(Pro) I believe that section 3 of the document should include the Carpet and Rug Institutes Seal of Approval for Extractors as a product requirement. (CRI SOA, Bronze minimum). CRI is the industry recognized standard for vacuum cleaners with their Green Label program, a program already endorsed by this document. Green Label currently has hundreds of approved vacuum cleaners by more than 40

companies. This standard changed the way many manufacturers approached IAQ concerns and cleaning efficacy and I believe that the SOA is doing the same for extractors. Green Seal has included the CRI SOA requirement in section 3.3 'Powered Equipment Use/Management Plan' of their 'Proposed Environmental Standards for Cleaning' document.
(Ted Hershey, Product Manager, Nilfisk-Advance, Inc.)

Reconsider Proposal to Use the Green Label Program to Measure the Environmental Sensitivity of Vacuum Cleaners.

The Hoover Company ("Hoover"), a subsidiary of Whirlpool Corporation, is a leading manufacturer of floor care products. These comments address Hoover's concerns about Section V, #5, Vacuum Cleaner Requirements in the NYS Proposed Guidelines and Specifications.

The proposed guidelines would require all elementary schools in New York to purchase and use only those vacuum cleaners approved under the Carpet and Rug Institute "CRI" Green Label Program. Hoover appreciates OGS's support for the use of environmentally sensitive products; however, we believe the Green Label Program inconsistently measures performance and emissions of vacuum cleaners. The Green Label Program is a standard for soil removal, dust containment and carpet appearance retention developed by the carpet industry, with little involvement from vacuum cleaner manufacturers. As a result, the measurements of the CRI testing are arbitrary and inconsistent.

CRI is not accredited by the American National Standards Institute (ANSI), which ensures that test procedures and standards are developed in an open and fair environment. Hoover and most other vacuum cleaner manufacturers participate in an ANSI-accredited standard development process for vacuum cleaners developed by the American Society for Testing and Material (ASTM) Technical Committee F11. The ASTM testing measures the filtration efficiency, air performance and cleanability of vacuum cleaners, in addition to many other factors in vacuum cleaner performance and reliability. We believe any procurement guidelines for vacuum cleaners should be based on standards developed in an open and balanced environment, with input from all stakeholders.

The Green Label Program's testing criteria are also applied inconsistently, as some commercial-style vacuum cleaners are not required to meet the test criteria on all carpet types required for household vacuum cleaners. In addition, the voluntary nature of the Green Label Program has led to a list of approved cleaners that is incomplete and out-of-date.

(David M. Baker, Vice President, Marketing, Hoover Floorcare)

Section V (#5) of the above referenced draft procurement document issued by the New York Office of General Services (OGS) is proposing to adopt the Carpet and Rug Institute (CRI) Green Label Testing Program for Vacuum Cleaners. The proposed procurement document, once finalized, will become mandatory for all elementary and secondary schools in New York State and only those vacuum cleaners that are approved under the CRI Green Label Testing Program for Vacuum Cleaners and included on the OGS list of environmentally sensitive cleaning products can then be used in the schools.

The Association of Home Appliance Manufacturers (AHAM) is the trade association representing manufacturers of floor care appliances as well as major and portable appliances, and suppliers to the industry. The AHAM Floor Care Division represents 20 manufacturers of household floor care appliances sold in the United States. These companies are responsible for 90% of the industry shipments of household floor care products in the U.S.

We understand New York State's desire to establish criteria to ensure that products used in schools are environmentally sound and meet performance criteria for effective cleaning. We believe, however, that mandating the procurement of only those vacuum cleaners that receive the CRI Green Label will not meet the objectives of the state with regard to carpet cleaning and that it is not an appropriate step for the state of New York to take. As described in further detail below, it is our view that the test protocols used by CRI are not technically sound and will not reliably measure the effectiveness of floor

care products. These test protocols were initially developed without consideration of existing voluntary consensus standards developed by the floor care industry and already in use. Furthermore, the testing program is administered in an inconsistent and closed manner. AHAM therefore opposes the draft proposal to adopt the CRI Green Label Program for vacuum cleaners.

BACKGROUND INFORMATION: The U.S. system of standards development is decentralized. In the private sector, standards are developed by various organizations that can best bring together the relevant stakeholders having the necessary technical expertise and interest and those that will be affected by the standards being developed. The American National Standards Institute (ANSI) is an organization that serves as administrator and coordinator of the U.S. private sector voluntary standards development system, mainly by administering an accreditation program for standards development organizations. Accreditation by ANSI signifies that the procedures used by the standards development organization meet specific requirement for openness, balance, consensus and due process. ANSI has also taken the lead on development of the United States Standards Strategy (<http://public.ansi.org/ansionline/Documents/Standards%20Activities/NSSC/USSS-2005%20-%20FINAL.pdf>) which has been endorsed by the U.S government. This important document outlines the need for voluntary consensus standards to be developed using the accepted principles for transparency, openness, impartiality, consensus, coherence.

Another organization, the American Society for Testing and Material (ASTM) Technical Committee F11 is accredited by the American National Standards Institute (ANSI) and has been developing consensus based performance test methods for vacuum cleaners since 1972. The ASTM F11 standards play a preeminent role in all aspects important to the effective standardization of vacuum cleaners, including filtration efficiency, air performance characteristics, cleanability, durability and reliability. ASTM test methods must withstand the technical scrutiny of the industry and affected stakeholders and are known to be technically sound and rigorous. ASTM F11 test methods include precision statements developed through interlaboratory testing of at least six laboratories. A precision statement expresses the variability that resulted when the test method was used in an inter-laboratory study (ILS) involving multiple laboratories. A statement on precision allows potential users of the test method to assess in general terms its usefulness in proposed applications and provides information on the repeatability and reproducibility of a test method. While many manufacturers of vacuum cleaners participate in the development of ASTM F11 standards, there is also full participation by consumers, consumer organizations, testing laboratories, and by CRI. The ASTM standards development process is open, transparent and balanced.

TECHNICAL CONCERNS: The CRI test protocols for soil removal, dust containment and carpet appearance retention developed by CRI are not consistent with the related performance standards already in existence within the ANSI accredited ASTM F11 standards development group. The ASTM F11 standards are not used in the CRI Green Label Testing Program for Vacuum Cleaners even though the vacuum cleaner industry has repeatedly requested that these standards be considered. There is no information available on the repeatability and reproducibility of the CRI test protocols because no comparison testing has been done with other laboratories.

CRI is not an ANSI accredited standards development organization. The CRI test protocols for vacuum cleaners were developed by the carpet manufacturers and consultants to the carpet industry. The testing of vacuum cleaner models is conducted by a single laboratory and without any correlation testing with other testing laboratories. Essential information regarding CRI test protocol development activities is not accessible to all interested parties, including household vacuum cleaner manufacturers.

Decisions on the CRI Green Label Testing Program for Vacuum Cleaners and the specific certification levels are not reached through consensus among those affected, including household vacuum cleaner manufacturers, and technical justification for the levels selected has not been communicated. For example, the rationale for selecting a certain dirt removal as the “passing” level to consider a carpet “clean” has not been explained.

PROCESS CONCERNS: AHAM is also concerned about administration of the CRI Green Label Testing Program for Vacuum Cleaners. Because only one laboratory has been selected to conduct the Green Label Program testing and no process has been defined to have other laboratories considered for approval to perform testing, members do not have any options on timeliness and cost of the testing associated with the program. Additionally, the CRI list of vacuum cleaners approved under the Green Label Testing Program for Vacuum Cleaners is out of date. Some of the models listed on the list are no longer manufactured and some of the organizations listed no longer participate.

AHAM's Floor Care Division members have met with CRI representatives a number of times to discuss manufacturers' concerns with the Green Label Testing Program and have provided documented recommendations for addressing program deficiencies. AHAM continues to dialogue with CRI about changes to this program.

Based on the significant technical and process concerns noted above, AHAM Floor Care members recommend that the OGS not adopt the CRI Green Label Testing Program as the vacuum cleaner requirements within the draft procurement specification. AHAM does not believe it is an appropriate standard on which procurement decisions regarding vacuum cleaners should be made.

(Ramona J. Saar, Director, Standards & Certification Programs, (AHAM) Association of Home Appliance Manufacturers)

I believe the document needs more fine tuning especially with some of the equipment requirements and in its discussions about carpet care and the issues associated with the use of hot versus cold water.
(Professor Stephen Ashkin. President of The Ashkin Group, LLC.)

The Carpet and Rug Institute (CRI) is the national trade association representing the carpet and rug industry. The institute's membership consists of manufacturers representing over 90% of all carpet produced in the United States, as well as suppliers of raw materials and services to the industry. CRI has developed and administers several indoor air quality (IAQ) testing programs commonly referred to as the "Green Label" programs, including the CRI Green Label IAQ Vacuum Cleaner Testing Program. This testing program tests and certifies the performance of vacuum cleaners in three areas:

Soil Removal: The soil removal test requires that the vacuum cleaner remove a minimum quantity of soil in four passes from a "soiled" standard test carpet.

Dust Containment: The dust containment test evaluates the total amount of dust particles released into the surrounding air at breathing height through the filtration bag, turbulence from the action of the brush rolls, carbon particles from the motor brushes, and any air leaks from the entire vacuum cleaner system. This standard requires that a vacuum cleaner release into the surrounding environment no more than 100 micrograms of dust particles per cubic meter of air, which is below levels stated in the National Ambient Air Quality Standards.

Carpet Appearance Retention: The test for appearance retention requires the vacuum cleaner to have a minimal effect on carpet appearance after 200 passes, the equivalent of one year of normal vacuum use.

The development of the CRI "Green Label" (GL) IAQ Vacuum Cleaner Testing Program was based on the need to minimize the amount of particulate/dust emissions during vacuuming. This improves indoor air quality and directly benefits public health. It also reduces the amount of particulates/dust being redeposited onto indoor surfaces.

During the development of the Dust Containment test protocol and standard, the data generated indicated that vacuum cleaners with low Soil Removal performance would meet the Dust Containment standard. However, the majority of vacuum cleaners with a reasonable level of Soil Removal would not pass the Dust Containment standard. Therefore, it was necessary to develop a test and set a Soil Removal performance standard in combination with the Dust Containment standard. It was then learned that machines which could remove large amounts of soil could also damage the texture of carpets, and a Carpet

Appearance Retention standard was developed to limit that damage. The CRI GL IAQ Vacuum Cleaner Testing Program is the only certification program that requires this interaction between three key performance requirements.

There is an enormous amount of test data available to clearly show that the CRI GL IAQ testing program has resulted in the development of vacuum cleaner systems that demonstrate higher levels of soil removal and do a more effective job of containing soil in the filter bag, thereby assisting in maintaining improved indoor air quality.

Participation in the CRI GL IAQ Vacuum Cleaner Testing Program is strictly voluntary. CRI is completely independent of manufacturing or selling vacuum cleaners and testing is performed by an independent testing laboratory in accordance with test protocols and standards peer reviewed by:

Dr. Alan Hedge, Professor, Design & Environmental Analysis, Cornell University, Ithaca, NY

Dr. Michael A. Berry, Professor, Facilities Services Division, University of North Carolina at Chapel Hill, Chapel Hill, NC; retired Deputy Director of USEPA's National Center for Environmental Assessment at Research Triangle Park, NC

Dr. P. Barry Ryan, Professor & Director of Laboratories, Environmental & Occupational Health, School of Public Health, Emory University, Atlanta, GA

The program was reviewed by the US Environmental Protection Agency and the American Lung Association and gained their support as an excellent program to improve and maintain good IAQ.

The testing protocols are unique, innovative, open and available to the public and other independent testing laboratories. The testing equipment is sophisticated and reliable. The room-size environmental chamber where dust containment is tested has the latest indoor air testing capability to quantify particulate/dust emissions before, during and after vacuuming. For research purposes, one major vacuum cleaner manufacturer has purchased the necessary testing equipment and constructed a similar environmental control room to CRI specifications.

Various test methods are being processed through the ASTM system; however, ASTM does not set performance standards. Therefore, CRI has started the process to become an ANSI Accredited Product Certifying Body to officially administer the CRI GL IAQ Carpet and GL IAQ Vacuum Cleaner Certifications.

Based on the large numbers of CRI GL Certified Vacuum Cleaners listed on the CRI website, www.carpet-rug.org; the CRI GL IAQ Vacuum Cleaner Certification Program should be recognized as a worthwhile/valuable part of the NYS environmentally sensitive cleaning and maintenance program. Specifying CRI GL IAQ Certified Vacuum Cleaners for Procurement and Use as an Environmentally Sensitive Cleaning and Maintenance Product will contribute to improved indoor air quality; result in less frequent cleanings which will lower the cost of an effective maintenance program.

(Ken McIntosh, Sr. Technical Director, Carpet and Rug Institute (CRI) on behalf of Werner H. Braun, President of CRI and Carey Mitchell, Chair, CRI Cleaning & Maintenance Subcommittee, CRI Cleaning & Maintenance Issues Management Team, Director, Technical Services, Shaw Industries, Inc.)

As a vacuum cleaner manufacturer for over 90 years. The Kirby Company (Kirby) supports the Carpet and Rug Institute's (CRI) Green Label Testing Program. Our Company has been involved in setting performance standards for vacuum cleaners for over 40 years with organizations such as the former Vacuum Cleaner Manufacturers Association (VCMA) and ASTM. Additionally, we worked with CRI and the leading carpet manufacturers in the development of the current Green Label Program.

Although the standards developed by the aforementioned organizations are all effective, the CRI Green Label Program is currently the only vacuum cleaner certification program that considers not only cleaning effectiveness of vacuum cleaners but indoor air quality as well. The Green Label Program certifies vacuum cleaners that effectively remove dirt from carpet; contains dust within the filtration bag and the machine itself, while effectively keeping it out of the air, without damaging the carpet or its appearance. Kirby is a

participant in the Green Label Program and supports the continued efforts of CRI to provide consumers with a program to ensure they are effectively cleaning and maintaining their carpet while maintaining a safe indoor air environment.

As a reference (38j2.), please find attached Kirby's response to AHAM, as an AHAM member, to the letter that was sent to your offices on May 3, 2006.

(Mike Nichols, Executive Vice President of Operations, Kirby Company, Cleveland, Ohio)

(May 3, 2006, AHAM, Attention: Ms. Ramona Saar, 1111 19th Street, NW, Suite 402 Washington DC 20036, Re: Response to Draft Letter Opposing NY Adoption of CRI Green Label Program for Schools, Dear Ramona:)

I would like to accept your invitation for objections and comments to the proposed letter to the New York Office of General Services (NY OGS).

After further consideration and internal review, Kirby objects to sending the letter to the NY OGS as drafted. Although we agree with some of the comments raised in the letter, it is very disparaging toward the Carpet and Rug Institute (CRI) and offers no alternative program for the NY OGS to utilize. Although CRI's Green Label Vacuum Cleaner Program remains unchanged at this time, CRI is moving forward with evaluating the merit of a Seal of Approval Program for vacuum cleaners. In fact, they have asked AHAM to participate in a discussion about potential programs to develop; and implement in the future that will benefit both industries. Rather than deteriorate an already strained relationship between AHAM and CRI, both industries could benefit from a more collaborative relationship in regards to future certification programs.

(Steve Pastor, Engineering Manager, Kirby Company, Cleveland, Ohio)